

History of Computing

Roots of Computing

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Roots of Computing
Mechanical vs Electronics-
driven machines

Book: Computer Science : An
Overview, 12th ed. By J. Glenn
BrookShear and Dennis Brylow

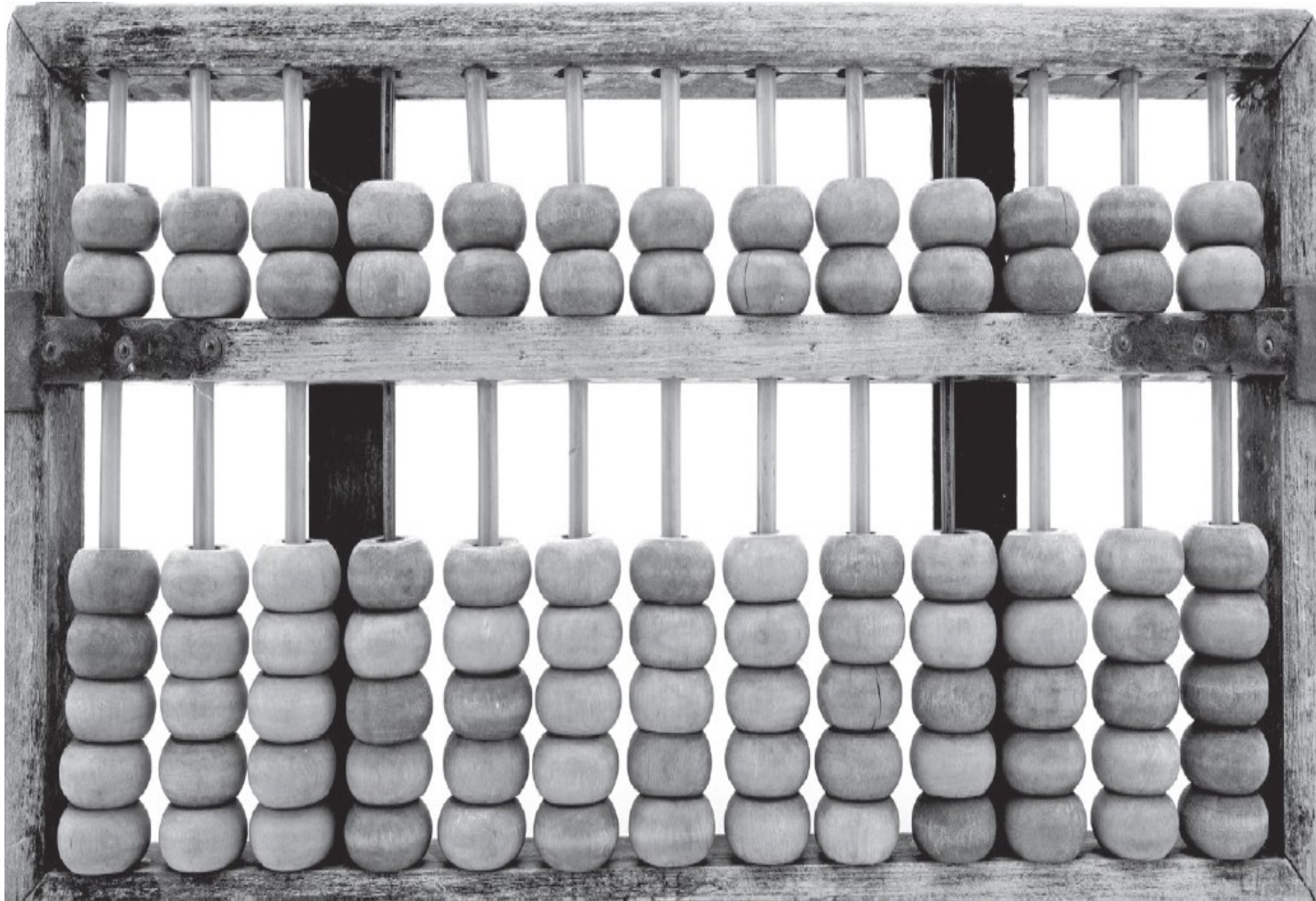
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Roots of Computing

Abacus:

- ✓ Ancient China, Greek and Roman Civilization

Abacus



Roots of Computing

Technology of Gears:

- ✓ Pascal from france (1623-1662)
- ✓ Leibniz (1646-1716) from Germany
- ✓ Babbage from England (1792-1871)

Technology of Gears



Data Storage

In Geared Technology:

- ✓ Pascal and Leibniz output in gear
- ✓ Babbage produced output on paper (punch cards)
- ✓ Punch card helped in algorithm changes

Data Storage

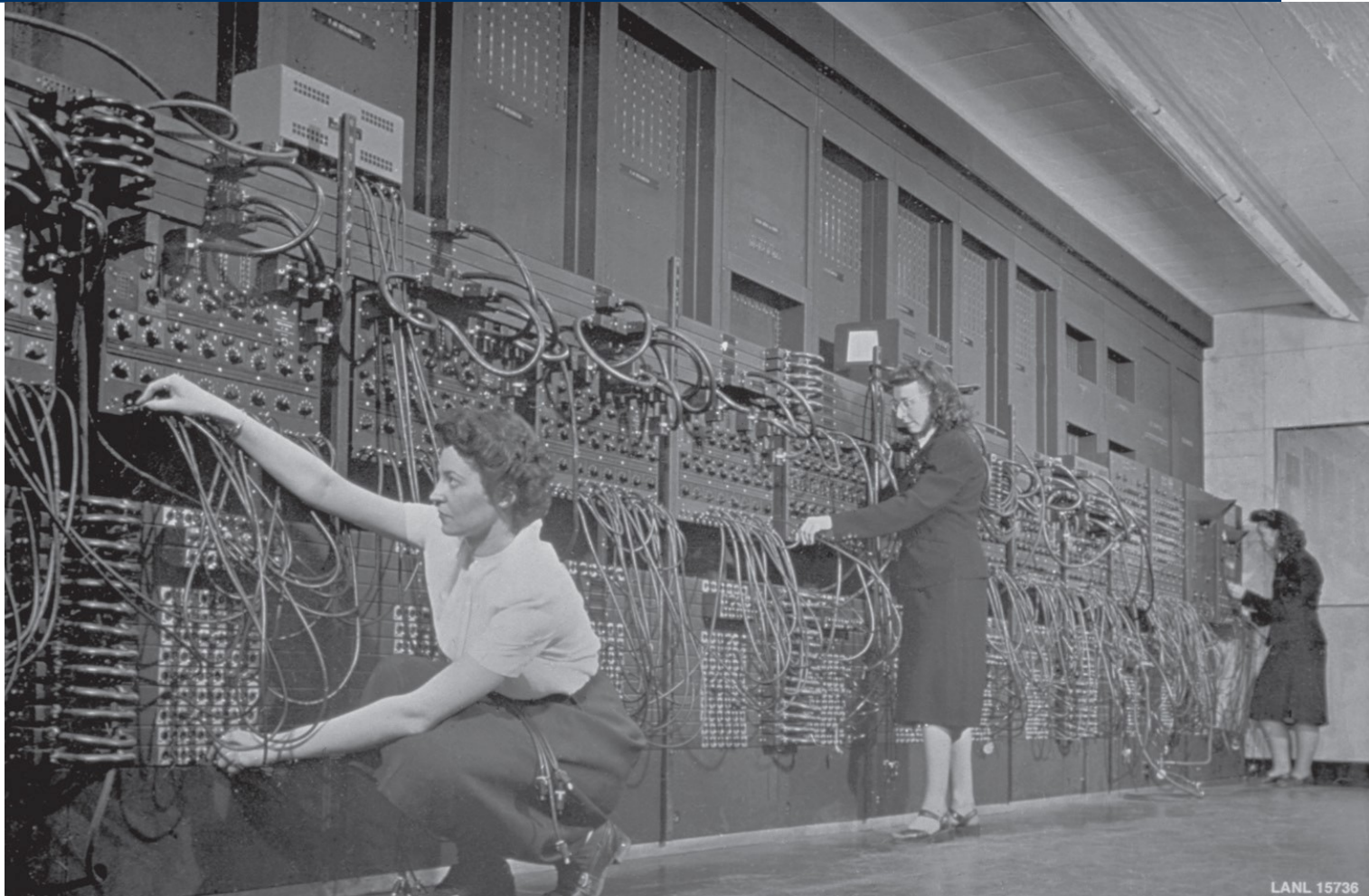


Mechanical to Electronic

Electronically Controlled Mechanical Relays

- ✓ Cost effective production of geared Technology-challenge
- ✓ Electromechanical machine by Stibitz in 1940 at Bell Labs
- ✓ Mark-I at Harvard in 1944

Vacuum Tubes



ENIAC (electronic numerical integrator and calculator)

FactSheet: ENIAC by 1956

- ✓ Occupied 1800 square feet
- ✓ 20, 000 vacuum tubes
- ✓ 1500 relays
- ✓ 10, 000 capacitors
- ✓ 70, 000 registers
- ✓ 200 Kilo Watt electricity
- ✓ Weight 30tons <https://www.computerhope.com/jargon/e/eniac.htm>
- ✓ Cost = \$487, 000
- ✓ PKR = 62.5 millions

Rapid Advancement

- ✓ Transistor
- ✓ Integrated Circuits
- ✓ Size reduction
- ✓ Processing Power doubling in 2 years
- ✓ Desktop computer by Steve Jobs and Stephen Wozniak in 1976
- ✓ IBM launched PC in 1981
- ✓ Web
- ✓ Smart Phones

Summary

History of Computing

- ✓ Abacus to Smart phone